

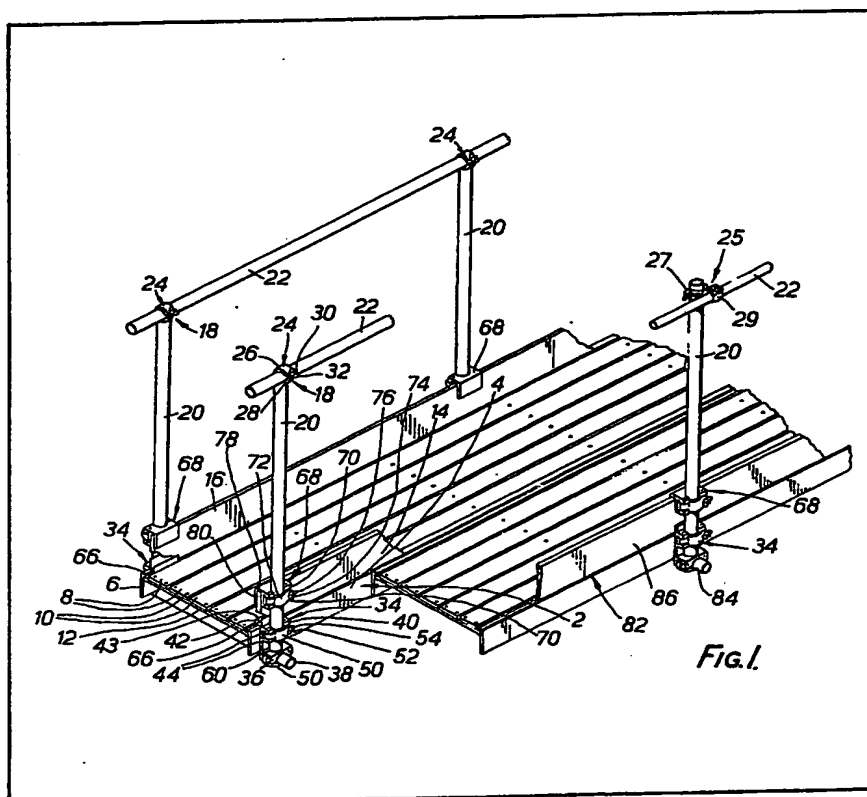
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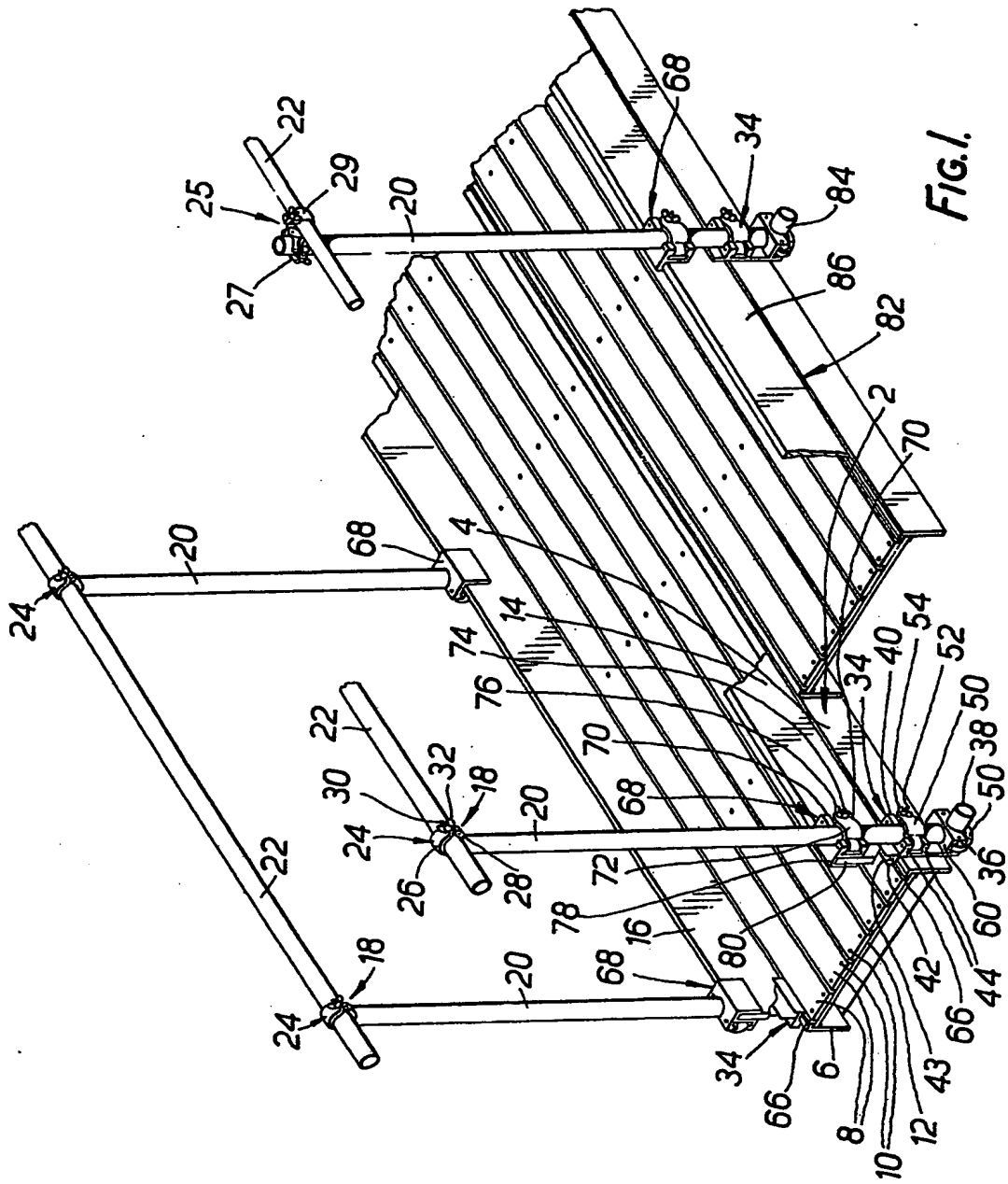
(54) A coupling device

(57) A coupling device (34) for mounting a hand guard rail (18) and a toeboard (14, 16) on a scaffolding platform (2), which coupling device comprises a first clamp (36) for clamping a first elongate scaffolding member (38) in a horizontal position and underneath the platform, a second clamp (40) which is joined to the first clamp and which is for clamping a second elongate scaffolding member (20) in a vertical position and alongside the platform so that the vertical member constitutes a stile of the hand guard rail, and a recessed portion (42) which is joined to the second clamp and which has a recess (43) for receiving one edge of a toeboard for the platform.

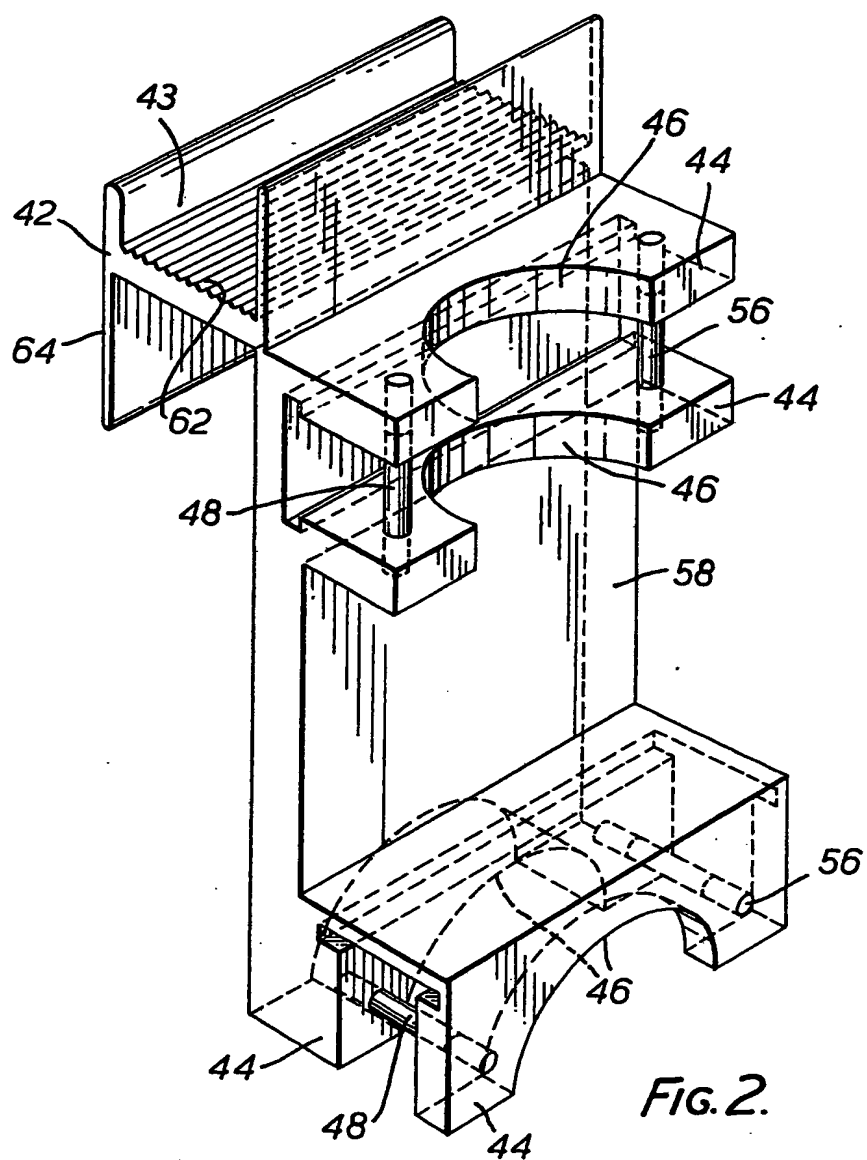


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SPECIFICATION

A coupling device

5 This invention relates to a coupling device for mounting a hand guard rail and a toeboard on a scaffolding platform.

Scaffolding platforms, or staging platforms as they are often called, are well known and a hand guard rail is clearly required in order to provide safety for persons working on the platform. The scaffolding platform also requires toeboards for ensuring that tools placed on the platform are not inadvertently kicked off the platform whereupon they might injure persons beneath the platform.

15 It is an aim of the present invention to provide a coupling device which is for use in mounting both a hand guard rail and a toeboard on a scaffolding platform.

20 Accordingly, this invention provides a coupling device for mounting a hand guard rail and a toeboard on a scaffolding platform which coupling device comprises a first clamp for clamping a first elongate scaffolding member in a horizontal position and underneath the platform, a second clamp which is joined to the first clamp and which is for clamping a second elongate scaffolding member in a vertical position and alongside the platform so that the vertical member constitutes a stile of the hand guard rail, and a recessed portion which is joined to the second clamp and which has a recess for receiving one edge of a toeboard for the platform.

The recessed portion and a body portion of each of the first and second clamps may be formed as a single extrusion.

35 The first clamp may have a recess for receiving the first elongate member and the second clamp may have a recess for receiving the second elongate member. The recesses in the first and second clamps may each be formed in a body portion of the clamps, each body portion being such that it comprises a pair of spaced apart recessed flanges.

40 The first and second clamps may each be closed by a pivotable lid member which is held in its closed position by a pivotable bolt and a nut. The pivotable lid member may be formed by casting. Usually, the nut will be a wing nut.

Advantageously, the first clamp forms a support member for supporting the vertical member when it is in the second clamp. If the vertical members required for the hand guard rail are thus all of a predetermined height, it is only necessary to insert each vertical member into the second clamp until it rests on the first clamp to know that all the vertical members will be of the same height. Horizontal members of the hand guard rail can then be connected to the vertical members at predetermined positions so that the height of the horizontal members of the hand guard rail will always be known and will be constant. Furthermore, if a person should lean on the hand guard rail such that substantial downward pressure is applied to the vertical members, there is no

danger of them slipping through the second clamps, for example if the second clamps have not been properly done up, since the vertical members will be resting on the first clamps and they cannot move any further.

Preferably, the recessed portion has a grooved bottom surface for gripping the toeboard when it is inserted in the groove. If the toeboard is firmly gripped by the bottom surface of the groove, it does not matter if the toeboard is insufficiently thick to occupy the entire width of the groove. Toeboards of varying thickness can thus be employed and these toeboards will not move even if they are kicked by workmen working on the platform.

Advantageously, the recessed portion has a flange which extends below the bottom of the grooves in the grooved portion and which is adapted to extend into and grip the platform.

80 The coupling device may be made of various materials. Usually, the coupling device will be made of a light non-rusting metal such for example as aluminium. Other metals may obviously be employed if desired.

Usually, the first and second elongate scaffolding members will be tubes of circular cross section but it is to be appreciated that tubes of other cross sectional shapes and also solid elongate members may be employed if desired.

90 An embodiment of the invention will now be described solely by way of example and with reference to the accompanying drawings in which:

Figure 1 shows part of a scaffolding platform employing coupling devices in accordance with the invention; and

Figure 2 is an enlarged view of part of one of the coupling devices employed in Figure 1.

Referring to the drawings, there is shown a scaffolding platform 2 comprising side boards 4, 6 and horizontal boards 8 which are held by rivets 10 to cross members, one of which is shown as cross member 12. The horizontal boards 8 are bounded by a pair of toeboards 14, 16.

105 The platform 2 is provided with hand guard rails 18 comprising vertical elongate members 20 which constitute stiles of the hand guard rails 18 and horizontal members 22. The members 20, 22 may be coupled together by clamps 24. Each clamp 24 comprises a pair of parts 26, 28, the part 26 pivoting with respect to the part 28. The two parts 26, 28 are held together in position by a pivotable bolt 30 and a wing nut 32. The part 28 is welded to the top of the vertical member 20 so that the horizontal member 22 becomes positioned on top of the member 20 and not to one side, where it may occupy space. As an alternative to employing the clamp 24, the clamp 25 may be employed, the clamp 25 being a double clamp having one part 27 for securing to the member 20 and one part 29 for securing to the member 22.

120 The vertical members 20 of the hand guard rails 18 and the toeboards 14, 16 are held in position by coupling devices 34.

Each coupling device 34 comprises a first clamp 36 for clamping a horizontal elongated scaffolding member 38 underneath the platform 2. Each coupling device 34 further comprises a second clamp 40 for clamping the vertical members 20 in position as shown. The coupling device 34 further comprises a recessed portion 42 having a recess 43 for receiving the lower edge of the toeboard 14, 16.

The first clamp 36 and the second clamp 40 are similarly constructed as will be seen from the drawing but they extend at right angles to each other. Each clamp 36, 40 comprises a pair of spaced apart flanges 44 which are provided with recesses 46 as shown most clearly in Figure 2, which recesses 46 receive the members 38, 20 as shown. Pivot pins 48 extend between the flanges 44 and pivotally support a lid member 50 for closing the clamps 36, 40. The lid members 50 are each held in their closed position by a bolt 52 and a wing nut 54. The bolts 52 pivot about pivot pins 56.

The recessed portion 42, body portions constituted by the flanges 44 of the clamps 36, 40 and a wall portion 58 of the coupling device 34 can be formed as a single extrusion, for example from aluminium. The lid members 50 will usually be formed as castings, for example also from aluminium.

In the assembled condition, the horizontal members 38 and the vertical members 20 are effectively joined together by the coupling devices 34, the coupling devices 34 being so arranged that as the members 50 are tightened up, the adjacent members 38, 20 are pulled tightly together. It will also be seen most clearly from Figure 1 that the vertical members 20 rest on a platform portion 60 of the first clamps 36 when the vertical members 20 are in their second clamps 40. It is thus impossible for the vertical members 20 to be pushed vertically downwards through their second clamps 40 even if the lid members 50 of the second clamps 40 have not been correctly tightened. Also, the platform portion 60 ensures that if the vertical members 20 are cut to the same height, they will always extend upwardly for the same distance providing that they are resting on the platform portions 60. The height of the horizontal members 22 above the boards 8 will thus always be known with certainty.

The bottom of the recess 43 of the recessed portion 42 is provided with ribs 62 for gripping the bottom edge of the toeboards 14, 16. The toeboards 14, 16 will thus always be securely gripped and it will not matter if the toeboards employed are insufficiently thick to occupy the full width of the recess 43.

The recessed portion 42 is provided with a downwardly depending flange 64 which extends below the bottom of the recess 43 and which extends into a gap 66 between the side boards 4, 6 and their adjacent horizontal boards 8. The flange 64 thus grips the platform 2.

The upper edge of the toeboards 14, 16 are gripped by a device 68 which is substantially the same as the upper part of the coupling device 34. Thus, the device 68 comprises a clamp having a pair of recessed flanges 70, a pivotable lid member 72, a bolt 74 and a wing nut 76. The device 68 further comprises a recessed portion 78 having a recess 80 for receiving

the top of the toeboards 14, 16.

Referring particularly to Figure 1, if it is desired to place a second platform 82 alongside the platform 2, then the horizontal member 38 will be increased in length as is shown by the horizontal member 84. The horizontal member 84 will thus extend under both of the platforms 2, 82 and it will act as a rigidifying member in addition to its other functions. Obviously, the toeboard 14 would then be removed and a toeboard 86 will be employed. When two or more of the platforms 2, 82 are positioned alongside each other, it sometimes happens that when workmen are walking from one platform to another, the platform tends to move up and down with respect to each other. This can obviously be dangerous and this effect is prevented by the horizontal members 84 which can be appropriately spaced apart.

It is to be appreciated that the embodiments of the invention described above with reference to the drawings have been given by way of example only and that modifications may be effected. Thus, for example, different types of clamps 36, 40 may be employed. As shown in Figure 1, the recess 80 is rectangular in end view with a straight wall for engaging the upper surface of the toe boards 14, 16. This straight wall can be inclined if desired so that the toe boards 14, 16 that are thinner in width than the width of the recess 80 can self-locate and jam against the inclined wall.

95 CLAIMS

1. A coupling device for mounting a hand guard rail and a toeboard on a scaffolding platform, which coupling device comprises a first clamp for clamping a first elongate scaffolding member in a horizontal position and underneath the platform, a second clamp which is joined to the first clamp and which is for clamping a second elongate scaffolding member in a vertical position and alongside the platform so that the vertical member constitutes a stile of the hand guard rail, and a recessed portion which is joined to the second clamp and which has a recess for receiving one edge of a toeboard for the platform.

2. A coupling device according to claim 1 in which the recessed portion and a body portion of the first and second clamp is formed as a single extrusion.

3. A coupling device according to claim 1 or claim 2 in which the first clamp has a recess for receiving the first elongate member and the second clamp has a recess for receiving the second elongate member.

4. A coupling device according to claim 3 in which the recesses in the first and second clamps are each formed in a body portion of the clamps, each body portion being such that it comprises a pair of spaced apart recessed flanges.

5. A coupling device according to any one of the preceding claims in which the first and second clamps are each closed by a pivotable lid member which is held in its closed position by a pivotable bolt and a nut.

6. A coupling device according to claim 5 in which the pivotable lid member is formed by casting,

7. A coupling device according to claim 5 or claim 6 in which the nut is a wing nut.

5 8. A coupling device according to any one of the preceding claims in which the first clamp forms a support member for supporting the vertical member when it is in the second clamp.

9. A coupling device according to any one of the preceding claims in which the recessed portion has a grooved bottom surface for gripping the toeboard
10 when it is inserted in the groove.

10. A coupling device according to any one of the preceding claims in which the recessed portion has a flange which extends below the bottom of the grooves in the grooved portion and which is adapted
15 to extend into and grip the platform.

11. A coupling device substantially as herein described with reference to the accompanying drawings.

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